

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

**In re Application of:**

<b>Application No.:</b>	10/583,721	<b>Examiner:</b>	Bitar, Nancy
<b>Filing Date:</b>	October 1, 2007	<b>Art Unit:</b>	2624
<b>First Inventor:</b>	Steffen Schmalz	<b>Customer No.:</b>	23364
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<b>For:</b>	BANK NOTE PROCESSING MACHINE AND METHOD FOR IDENTIFYING FORGED BANK NOTES		

**APPEAL BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an appeal brief filed pursuant to the applicant's appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1-7 in the above identified application.

The filing of this appeal brief is made within two months of the filing of the Notice of Appeal and is therefore timely.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee of record: GIESECKE & DEVRIENT GMBH (München, Germany).

**II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

A. Status of Claims in Proceeding

Claims 1-7 are currently pending in the above-identified application.

Claims 1-7 are rejected under 35 U.S.C. § 103(a).

B. Identification ofAppealed Claims

The applicant chooses to appeal from the rejection of claims 1-7.

Claims 2-5 depend from claim 1, and their patentability is based on their dependency from claim 1 and their individually recited features.

Claim 7 depends from claim 6, and its patentability is based on its dependency from claim 6 and its individually recited features.

A copy of all the pending claims as presented in the last entered amendment dated September 9, 2009 is included in the attached Claims Appendix.

**IV. STATUS OF AMENDMENTS**

There are no outstanding amendments to the claims. The last amendment to the claims was filed on September 9, 2009, and was entered in the Advisory Action dated September 22, 2009.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

For the purposes of appeal, the rejections of claims 1-7 are appealed.

**A. Independent claim 1**

Pending claim 1 requires a method for recognizing forged bank notes (paragraphs [0001], [0005]) with a bank note processing machine (10; paragraphs [0001], [0005], [0011]).

The method comprises the following steps.

Processing the bank notes (21) with the bank note processing machine (10; paragraphs [0011], [0016], [0020], [0022]).

Checking the bank notes (21) with comparative data stored by the bank note processing machine (10) and derived from authentic bank notes and known forgeries (paragraphs [0012], [0013], [0020]).

Using additional comparative data for new types of forgeries, which are not recognized based on the comparative data derived from authentic bank notes and known forgeries (paragraphs [0018]-[0020]), wherein the bank notes (21) to be checked are compared with both the comparative data and the additional comparative data for new types of forgeries so as to determine whether a forged bank note is present (paragraphs [0018]-[0020]).

**B. Dependent claims 2-5**

Pending claim 2 requires the method of recognizing forged bank notes as discussed above with respect to claim 1 and further includes wherein bank notes (21) to be checked are compared with the comparative data, and wherein only a comparison with the additional comparative data for new types of forgeries is effected, if with the check with the help of the comparative data the authenticity of the bank notes to be checked has been determined (paragraphs [0007], [0022], [0023]).

Pending claim 3 requires the method of recognizing forged bank notes as discussed above with respect to claim 1 and further includes wherein bank notes (21)

to be checked are compared with the comparative data, so as to determine their kind, and only a comparison with the additional comparative data for new types of forgeries is effected, if for the determined kind of bank notes comparative data for new types of forgeries are available (paragraphs [0012], [0022]).

Pending claim 4 requires the method of recognizing forged bank notes as discussed above with respect to claim 1 and further includes wherein comparative data and additional comparative data for new types of forgeries are available for each possible position of the bank notes (paragraph [0018]).

Pending claim 5 requires the method of recognizing forged bank notes as discussed above with respect to claim 1 and further includes wherein the additional comparative data for new types of forgeries are derived and produced from the new type of forgery after the first occurrence of the new type of forgery (paragraphs [0008], [0018]).

C. Independent claim 6

Pending claim 6 requires a bank note processing machine (10; paragraphs [0001], [0005], [0011]).

The bank note processing machine includes a control device (40; paragraphs [0011], [0012]), a non-volatile memory (41; paragraphs [0012], [0013]) and a sensor device (30; paragraphs [0011], [0013]) for recognizing forged bank notes.

The bank notes (21) to be checked are captured by the sensor device (30) and data are derived, which are compared with comparative data stored in the non-volatile memory (41), which are derived from authentic bank notes and known forgeries (paragraphs [0011]-[0013]).

Further, in the non-volatile memory (41) additional comparative data for new types of forgeries, which are not recognized based on the comparative data derived from authentic bank notes and known forgeries, are stored (paragraphs [0018], [0019]), and the data of the sensor device (30) for the bank notes (21) to be checked being compared by the control device (40) with both the comparative data and the

additional comparative data for new types of forgeries, so as to determine whether a forged bank note is present (paragraph [0020]).

D. Dependent claim 7

Pending claim 7 requires the bank note processing machine as discussed above with respect to claim 6 and further includes an interface (42) via which additional comparative data for new types of forgeries are loaded and stored in the non-volatile memory (41) (paragraph [0017]).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Rejection of claims 1-3 and 5-7 as being obvious under 35 U.S.C. § 103(a) by the proposed combination of U.S. publication no. 2003/0132281 (*Jones et al.*), and “Signature Verification: Increasing Performance by a Multi-Stage System” (*Sansone et al.*).

Rejection of claim 4 as being obvious under 35 U.S.C. § 103(a) by the proposed combination of U.S. publication no. 2003/0132281 (*Jones et al.*) and European publication no. EP 1 255 232 (*Pernot et al.*).

## VII. ARGUMENT

As discussed in detail below, the basis for the final rejection of claims 1-7 does not satisfy the requirements of anticipation of the subject matter recited in the rejected claims. Therefore, reversal of the rejection of claims 1-7 is respectfully requested.

### A. Claim Rejections

Claims 1-3 and 5-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed combination of U.S. publication no. 2003/0132281 (*Jones et al.*), and “Signature Verification: Increasing Performance by a Multi-Stage System” (*Sansone et al.*).

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed combination of U.S. publication no. 2003/0132281 (*Jones et al.*) and European publication no. EP 1 255 232 (*Pernot et al.*).

As discussed in detail below, the basis for the final rejection of claims 1-7 does not satisfy the requirements of *prima facie* obviousness of the subject matter recited in the rejected claims. Therefore, reversal of the rejection of claims 1-7 is respectfully requested.

### B. Pertinent Law

In rejecting claims under 35 U.S.C. § 103(a), it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See *In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

The showings by the examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). For ease of review, the analysis used to make findings should be made explicit. See *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 U.S.P.Q.2d 1385, 1396 (2007) citing *In re Kahn*, 441, F.3d

977, 988, 78 USPQ2d 1329 (Fed. Cir. 2006) “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”.

If that burden is met, the burden then shifts to the applicant to overcome the *prima facie* case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See *id.*; *In re Hedges*, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986).

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). It follows that all of the words recited in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). In particular, the question of whether the claimed invention as a whole would have been obvious, and not just whether the differences would have been obvious, must be addressed. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983).

C. The proposed combination of the *Jones* and *Sansone* publications does not amount to a *prima facie* case of obviousness with respect to claims 1 and 6

The discussion below is focused on the method of independent claim 1 and the apparatus of independent claim 6. The dependent claims 2, 3, and 5 stand or fall with independent claim 1, and dependent claim 7 stands or falls with independent claim 6.

Reversal of the rejection of claims 1 and 6 is respectfully requested on the basis that the *Jones* and *Sansone* publications, whether considered individually or collectively, fail to disclose or suggest every step or feature of the method according to claim 1 or every feature of claim 6.

As will be discussed below, the proposed combination of the *Jones* and *Sansone* publications fails to disclose the use of two different types of comparative data to determine whether or not certain bank notes are forgeries, a first type (comparative data) derived from authentic bank notes and known forgeries, and a second type, (additional comparative data) derived from new types of forgeries, which are not recognized based upon the comparative data derived from authentic banknotes and known forgeries, as is required by both claim 1 and claim 6.

Accordingly, claims 1 and 6 are patentable in view of the proposed combination of teachings of *Jones* and *Sansone* publications, since the proposed combination of these references does not constitute a case of *prima facie* obviousness.

In observing claims 1 and 6, it first must be understood that these claims both require the two different types of comparative data discussed above (comparative data, and additional comparative data) to determine whether or not certain bank notes are forgeries. Specifically, both claims specify that the comparative data is derived from authentic bank notes and known forgeries, and the additional comparative data relates to new types of forgeries which are not recognized based on the comparative data derived from authentic bank notes and known forgeries.

The Office action dated June 9, 2009 indicates on page 2 that the arguments presented in the response filed March 20, 2009 rely upon language, specifically the phrase “after the comparative data was established,” which is not recited in claims 1 and 6.

It is respectfully submitted that this phrase is exactly encompassed by the recitation in claims 1 and 6 that the “additional comparative data for new types of forgeries, *which are not recognized based on the comparative data derived from authentic bank notes and known forgeries*” (emphasis added). In other words, the new types of forgeries cannot be recognized using only the comparative data derived from authentic bank notes and known forgeries, and hence, the additional comparative data relating to new types of forgeries is necessary to detect counterfeit bills based upon such new types of forgeries.

The additional comparative data for new types of forgeries cannot be derived from the comparative data derived from authentic bank notes and known forgeries, since the new forgeries *are not recognized* based upon the comparative data derived from authentic bank notes and known forgeries.

Thus, the additional comparative data relating to new types of forgeries must be after developed once the new types of forgeries (which are not recognized based on the comparative data derived from authentic bank notes and known forgeries) turn up, after the comparative data derived from authentic bank notes and known forgeries has already been previously established.

Turning to the *Jones* publication, which is relied upon in the Office action dated June 9, 2009 as teaching the comparative data derived from authentic bank notes and known forgeries and the additional comparative data relating to new types of forgeries as recited in claims 1 and 6, it is respectfully submitted that the *Jones* publication does not teach the use comparative data derived from authentic bank notes and known forgeries and the additional comparative data relating to new types of forgeries, as required by claims 1 and 6.

The *Jones* publication only teaches providing a first set of comparative data based upon authentic bank notes and known forgeries, and which first set of comparative data is used to determine forgeries. There is no disclosure of additional comparative data, relating to new types of forgeries, used in combination with comparative data derived from authentic bank notes and known forgeries and stored in the document processing machine.

In reference to Fig. 15, depicting a general description of the operation of the document processing system of the *Jones* publication, it is described in paragraph [0129] that certain counterfeit tests include measuring light emitted from the bill, testing for watermarks, holograms, magnetics, and security threads, and testing image quality (all of which relate to comparative data derived from authentic bank notes and existing forgeries).

Additional metrics that can be used as comparative data derived known forgeries include serial numbers that are associated with *known* counterfeit bills and may be stored and used as comparative data derived from authentic bank notes and known forgeries in the document processing system of the *Jones* publication (paragraphs [0054], [0059], [0129], [0135], [0139], [0166], [0168], [0171], [0173]).

Other metrics that can be used as comparative data derived from authentic bank notes and known forgeries include signatory information, such as the Secretary of Treasury, the Federal Reserve bank number, or other information that exists from *known* genuine documents (paragraphs [0113], [0128]).

Thus, the *Jones* publication discloses the use of comparative data derived from authentic bank notes and known forgeries in order to detect counterfeit bank notes.

However, the *Jones* publication simply fails to disclose the use of additional comparative data derived from new types of forgeries, which are not recognized based upon the comparative data derived from authentic banknotes and known forgeries, as is required by both claim 1 and claim 6.

While the *Jones* publication does disclose updating a database with serial numbers associated with bills determined to be counterfeit (paragraphs [0093], [0142], [0143], [0148], [0182]-[0187]), these serial numbers are associated with bills that are determined to be counterfeit using the existing *known* comparative data derived from *known* authentic bank notes and *known* forgeries. Thus, these updated serial numbers are only associated with forgeries or counterfeit documents that are recognized based upon the *known* comparative data derived from authentic documents and known forgeries, and cannot be considered to be additional comparative data for *new* types of forgeries, as is required by pending claims 1 and 6.

In other words, according to the *Jones* publication, in order to update the database with additional serial numbers associated with counterfeit bills, the bank notes must first be identified as being counterfeit (using only the existing comparative data derived from *known* authentic bank notes and *known* forgeries) before any serial numbers are extracted and stored by the document processing system. It follows that

if a counterfeit bank note of a new type of forgery is processed by the document processing system of the *Jones* publication, and does not satisfy any of the stored counterfeit tests (based upon comparative data derived from *known* authentic bank notes and *known* forgeries), the counterfeit bank note of the new type of forgery will not be recognized as counterfeit. Thus, the counterfeit bank note of a new type of forgery is therefore not identified as being counterfeit and is judged as being authentic instead, and the serial numbers of the counterfeit bank note of the new type of forgery will not and cannot be extracted and used in future processing of other bank notes.

Put another way, the extraction and storage of serial numbers according to the *Jones* publication of counterfeit bank notes is dependent on at least one bank note first being determined to be counterfeit by satisfying one of the stored, and thus old, counterfeit tests, which are based upon comparative data derived from *known* authentic bank notes and *known* forgeries.

The system according to the *Jones* publication is therefore akin to the types of systems discussed in the Background of the pending application wherein new forgeries are not recognized and are thus erroneously judged as an authentic bank note (specification at [0002]-[0004]). In other words, the system according to the *Jones* publication is simply incapable of recognizing new types of forgeries.

In the advisory action dated September 22, 2009, it is stated that “Jones et al paragraph [0183-0185] clearly teaches the comparison data for forgeries are obtained from comparison data for new forgeries.” However, as discussed above, the *Jones* publication merely discloses identifying new serial numbers associated with forgeries that are identified using the comparative data derived from *known* authentic bank notes and *known* forgeries, and does not disclose the use of additional comparative data for new types of forgeries that may have arisen after the comparative data derived from authentic bank notes and known forgeries was established, as required in pending claims 1 and 6.

Thus, contrary to the embodiments described by the *Jones* publication the method of pending claim 1 and the bank note processing machine of pending claim 6

require using both comparative data derived from authentic bank notes and known forgeries and additional comparative data of new forgeries not included in the comparative data in order to account for new types of forgeries that may have arisen after the comparative data derived from authentic bank notes and known forgeries was established.

As for the *Sansone* publication, this reference was correctly not relied upon in the rejection to teach the comparative data derived from authentic bank notes and known forgeries and the additional comparative data for new types of forgeries that may have arisen after the comparative data derived from authentic bank notes and known forgeries was established, and as required by claims 1 and 6. Instead, the *Sansone* publication only describes a multi-stage process which recognizes signatures only. There is no teaching in the *Sansone* publication that would suggest to a person having ordinary skill in the art, in view of the teachings of the *Jones* publication, to provide the comparative data derived from authentic bank notes and known forgeries and the additional comparative data for new types of forgeries that may have arisen after the comparative data derived from authentic bank notes and known forgeries was established, as required in pending claims 1 and 6.

In view of these observations, it is submitted that the proposed combination of the *Jones* and *Sansone* publications fails to disclose all of the features required by pending claims 1 and 6. Accordingly, a *prima facie* case of obviousness cannot be established with respect to pending claims 1 and 6, and reversal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claims 1 and 6 are patentable and therefore, claims 2, 3, 5, and 7, which depend from claims 1 or 6 respectively, are also considered to be patentable as containing all of the steps or elements of claims 1 or 6, as well as for their respective recited features. Accordingly, since the proposed combination of the *Jones* and *Sansone* publications fails to disclose all of the features required by pending claims 1 and 6, the proposed combination of the *Jones* and *Sansone* publications fails to establish a *prima facie*

case of obviousness with respect to claims 2, 3, 5, and 7, and reversal of this rejection is respectfully requested.

Further, with respect to claim 5, the Office action dated June 9, 2009 identifies the extracted serial numbers associated with the documents determined to be counterfeit according to the *Jones* publication as satisfying the requirement of claim 5 that the additional comparative data for new types of forgeries are derived and produced from the new type of forgery after the first occurrence of the new type of forgery. However, as discussed above in detail, the extracted serial numbers of the *Jones* publication relate only to *known* counterfeit or forged documents, and not to *new* types of forgeries.

Accordingly, a *prima facie* case of obviousness cannot be established with respect to claim 5, and reversal of this rejection is respectfully requested.

D. The proposed combination of the *Jones* and *Pernot* publications does not amount to a *prima facie* case of obviousness with respect to claim 4

Reversal of this rejection is respectfully requested on the basis that the *Pernot* publication fails to provide for the deficiencies of the *Jones* publication discussed above with respect to claim 1, from which claim 4 depends.

The *Pernot* publication is relied upon in the Office action dated June 9, 2009 as processing bank notes independent of their orientation. However, it is respectfully submitted that there is no discussion in the *Pernot* publication with regard to checking bank notes on comparative data derived from authentic bank notes and known forgeries and on additional comparative data for new types of forgeries that may have arisen after the comparative data derived from authentic bank notes and known forgeries was established, as is required by pending claim 1.

Accordingly, a *prima facie* case of obviousness cannot be established with respect to claim 1 by the proposed combination of the *Jones* and *Pernot* publications.

Claim 4 depends from claim 1, and is therefore patentable over the proposed combination of *Jones* and *Pernot* publications at least due to its dependency from claim 1 and its individually recited features.

Therefore, reversal of this rejection is respectfully requested.

**VIII. Conclusion**

For the reasons set forth above, claims 1-3 and 5-7 of the pending application define subject matter that is not rendered *prima facie* obvious within the meaning of 35 U.S.C. § 103(a) by the proposed combination of the *Jones* and *Sansone* publications.

For the reasons set forth above, claim 4 of the pending application defines subject matter that is not rendered *prima facie* obvious within the meaning of 35 U.S.C. § 103(a) by the proposed combination of the *Jones* and *Pernot* publications

Reversal of the rejection of claims 1-7 is respectfully requested.

The Fee required by 37 C.F.R. § 1.17(c) is submitted herewith. The Office is authorized to charge any additional fees associated with this communication to Deposit Account No. 02-0200.

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Application No.: 10/583,721  
Brief on Appeal

**IX. CLAIMS APPENDIX**

1. A method for recognizing forged bank notes with a bank note processing machine, the method comprising the steps of:

processing the bank notes with the bank note processing machine;

checking the bank notes with comparative data stored by the bank note processing machine and derived from authentic bank notes and known forgeries; and

using additional comparative data for new types of forgeries, which are not recognized based on the comparative data derived from authentic bank notes and known forgeries;

wherein the bank notes to be checked are compared with both the comparative data and the additional comparative data for new types of forgeries so as to determine whether a forged bank note is present.

2. The method according to claim 1, wherein bank notes to be checked are compared with the comparative data, and wherein only a comparison with the additional comparative data for new types of forgeries is effected, if with the check with the help of the comparative data the authenticity of the bank notes to be checked has been determined.

3. The method according to claim 1, wherein bank notes to be checked are compared with the comparative data, so as to determine their kind, and only a comparison with the additional comparative data for new types of forgeries is effected, if for the determined kind of bank notes comparative data for new types of forgeries are available.

4. The method according to claim 1, wherein comparative data and additional comparative data for new types of forgeries are available for each possible position of the bank notes.

5. The method according to claim 1, wherein the additional comparative data for new types of forgeries are derived and produced from the new type of forgery after the first occurrence of the new type of forgery.

6. A bank note processing machine comprising a control device, a non-volatile memory and a sensor device, for recognizing forged bank notes, wherein the bank notes to be checked are captured by the sensor device and data are derived, which are compared with comparative data stored in the non-volatile memory, which are derived from authentic bank notes and known forgeries,

and further wherein in the non-volatile memory additional comparative data for new types of forgeries, which are not recognized based on the comparative data derived from authentic bank notes and known forgeries, are stored, the data of the sensor device for the bank notes to be checked being compared by the control device with both the comparative data and the additional comparative data for new types of forgeries, so as to determine whether a forged bank note is present.

7. (Previously Presented) The bank note processing machine according to claim 6, wherein an interface is provided, via which additional comparative data for new types of forgeries are loaded and stored in the non-volatile memory.

**X. EVIDENCE APPENDIX**

There are no copies of evidence entered and relied upon in this appeal  
of the pending application.

**XI. RELATED PROCEEDINGS APPENDIX**

There are no related proceedings or decisions rendered by a court or the Board of Appeals in any proceeding identified in the related appeals and interferences section in the pending application.